

ABSTRACT

A priority encoder includes static, tree-like product circuitry that responds to input signals, providing subset signals for subsets of the input signals. The subset signals can be for power-of-two subsets such as 1, 2, 4, 8, etc. input signals. The priority encoder also includes dynamic, tree-like priority circuitry that responds to the subset signals, providing priority signals, each indicating whether a respective input line is asserted and has priority. Each output line of the priority circuitry can be controlled by a group of transistors in series, with a respective transistor for each of a non-redundant set of the subset signals. A priority encoder can include a number of lower-level priority encoding circuits and one upper level priority encoding circuit that receives overall signals from the lower circuits.